

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: January 7, 2002, 16:05:26 ; Search time 77.81 Seconds

(without alignments)  
22.618 Million cell updates/sec

Title: US-08-569-749-10

Perfect score: 294  
Sequence: 1 PEQLASAGFYVGNSSDPVKC.....CWESGDDPMVGHAKWPRCE 48

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 08  
Maximum Match 1008  
Listing first 45 summaries

Database : SWISSPROT\_39:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	294	100.0	604	1	BIR2_HUMAN
2	283	96.3	358	1	PIAP_PIG
3	282	95.9	618	1	BIR3_HUMAN
4	277	94.2	611	1	BIR_CHICK
5	269	91.5	600	1	BIR3_MOUSE
6	269	91.5	612	1	BIR3_MOUSE
7	200	68.0	268	1	IAP1_NPVOP
8	185	62.9	275	1	IAP3_GYCP
9	181	61.6	1403	1	BIRF_MOUSE
10	180	61.2	1402	1	BIRG_MOUSE
11	180	61.2	1403	1	BIRF_MOUSE
12	180	60.2	1403	1	BIRE_MOUSE
13	177	60.2	496	1	BIR4_MOUSE
14	177	60.2	496	1	BIR4_RAT
15	177	60.2	497	1	BIR4_HUMAN
16	177	60.2	1447	1	BIRB_MOUSE
17	173	58.8	1403	1	BIRI_MOUSE
18	163	55.4	438	1	IAP1_DROME
19	153	52.0	498	1	IAP2_DROME
20	116.5	39.6	4829	1	BIR6_HUMAN
21	114	38.8	286	1	IAP1_NPVAC
22	111	37.8	275	1	IAP1_NPVOP
23	107	36.4	339	1	ZFP_IRV6
24	101	34.4	997	1	BIR1_SCHPO
25	88.5	30.1	140	1	BIR5_MOUSE
26	88.5	29.1	142	1	BIR5_RAT
27	85.5	29.1	142	1	BIR5_HUMAN
28	68.5	23.3	224	1	IAPL_ASFB7
29	66.5	22.6	224	1	IAPL_ASFM1
30	62.5	21.3	224	1	IAPL_ASFC3
31	62.5	21.3	224	1	IAPL_ASFC4
32	62.5	21.3	238	1	IAPL_ASFM2
33	59.5	20.2	555	1	HYDL_STRHA

34	58.5	19.9	844	1	PBPB_ECOLI
35	58.5	19.9	1173	1	TSPI_XENTIA
36	57	19.4	1004	1	POI1_SCICO
37	56.5	19.2	114	1	IBB2_PEA
38	56.5	19.2	156	1	BODP_HUMAN
39	56.5	19.2	249	1	IAP2_NPVAC
40	56	19.0	65	1	VPI_BPMU
41	55	18.7	361	1	TSPI_BOVIN
42	54.5	18.5	1170	1	TSPI_HUMAN
43	54.5	18.5	1170	1	TSPI_MOUSE
44	54.5	18.5	1170	1	TSPI_MOUSE
45	54	18.4	64	1	MTA_STRPU

## ALIGNMENTS

RESULT 1  
BIR2\_HUMAN STANDARD: PRT: 604 AA.  
ID BIR2\_HUMAN  
AC 013489; Q16628; Q9UP46;  
DT 01-NOV-1997 (Rel. 35, Created)  
DT 01-NOV-1997 (Rel. 35, Last sequence update)  
DT 20-AUG-2001 (Rel. 40, Last annotation update)  
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1 (INHIBITOR OF APOPTOSIS  
DE PROTEIN 1) (H1AP1) (H1AP-1) (C-IAP2) (TNFR2-TRAF SIGNALING COMPLEX  
DE PROTEIN 1) (IAP HOMOLOG C).  
GN BIRC2 OR API1 OR IAP1 OR MHC.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.  
OX NCBI\_TaxId=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE-96128127; PubMed-8548810;  
RA Rothe M., Pan M.-G., Henzel W.J., Ayres T.M., Goeddel D.V.;  
RT "The TNFR2-TRAF signaling complex contains two novel proteins related  
RT to baculoviral inhibitor of apoptosis proteins";  
RL Cell 83:1243-1252(1995).  
RN [2]  
RP SEQUENCE FROM N.A.  
RX MEDLINE-99252096; PubMed-10233894;  
RA Horrevorts A.J., Fontijn R.D., van Zonneveld A.J., de Vries C.J.,  
RT ten Cate J.W., Pannekoek H.;  
RT "Vascular endothelial genes that are responsive to tumor necrosis  
RT factor-alpha in vitro are expressed in atherosclerotic lesions,  
RT including inhibitor of apoptosis protein-1, stannin, and two novel  
RT genes";  
RL Blood 93:3418-3431(1999).  
RN [4]  
RP SEQUENCE FROM N.A.  
RX MEDLINE-99252096; PubMed-10233894;  
RA Horrevorts A.J., Fontijn R.D., van Zonneveld A.J., de Vries C.J.,  
RT ten Cate J.W., Pannekoek H.;  
RT "Vascular endothelial genes that are responsive to tumor necrosis  
RT factor-alpha in vitro are expressed in atherosclerotic lesions,  
RT including inhibitor of apoptosis protein-1, stannin, and two novel  
RT genes";  
RL Blood 93:3418-3431(1999).  
RN [4]  
RP FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS  
WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO  
FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR  
NECROSIS FACTOR RECEPTOR 2 (TNFR2).  
CC -! SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).  
CC -! TISSUE SPECIFICITY: HIGHLY EXPRESSED IN FETAL LUNG, AND KIDNEY, IN

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CC THE ADULT EXPRESSION IS MAINLY SEEN IN LYMPHOID TISSUES.
CC INCLUDING SPLEEN, THYMUS AND PERIPHERAL BLOOD LYMPHOCYTES.
CC
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC
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CC -----
CC
CC EMBL: L49432; AAC41943.1; -.
CC DR EMBL: U45878; AAC50371.1; -.
CC DR EMBL: U37546; AAC50507.1; -.
CC DR EMBL: AF070674; AAC83232.1; -.
CC MIM: 601712; -.
CC
CC DR InterPro: IPR001370; BIR.
CC DR InterPro: IPR001315; CARD.
CC DR InterPro: IPR001841; Znf_Fing.
CC DR Pfam: PF00653; BIR; 3.
CC DR Pfam: PF00619; CARD; 1.
CC DR Pfam: PF00097; zf-C3HC4; 1.
CC DR SMART: SM00238; BIR; 3.
CC DR SMART: SM00114; CARD; 1.
CC DR SMART: SM00184; RING; 1.
CC DR PROSITE: PS01282; BIR_REPEAT_1; 3.
CC DR PROSITE: PS50143; BIR_REPEAT_2; 3.
CC DR PROSITE: PS50209; CARD; 1.
CC KW Apoptosis; zinc-finger; Repeat.
CC FT REPEAT 29 96 BIR 1.
CC FT REPEAT 169 235 BIR 2.
CC FT REPEAT 255 322 BIR 3.
CC FT DOMAIN 447 525 CARD.
CC FT ZN_FING 557 591 RING-TYPE.
CC FT CONFLICT 18 18 N -> Y (IN REF. 4).
CC FT CONFLICT 119 119 N -> H (IN REF. 2).
CC FT CONFLICT 153 153 D -> E (IN REF. 2).
CC FT CONFLICT 163 163 H -> P (IN REF. 2).
CC FT CONFLICT 165 165 A -> P (IN REF. 2).
CC FT CONFLICT 191 191 K -> R (IN REF. 2).
CC FT CONFLICT 191 191 F -> L (IN REF. 2).
CC FT CONFLICT 364 364 Q -> P (IN REF. 2).
CC FT CONFLICT 552 552 Q -> P (IN REF. 2).
CC SQ SEQUENCE 604 AA; 68371 MW; 8581A0DBA9AAB4A7 CRC64;

Query Match 100.0%; Score 294; DB 1; Length 604;
Best Local Similarity 100.0%; Pred. No. 1.9e-28;
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PEOULASAGFYVYVNSDDVKCFCCDGLRCWESGDDPVMVQHAHAKWPRCE 48
DB 273 PEOULASAGFYVYVNSDDVKCFCCDGLRCWESGDDPVMVQHAHAKWPRCE 320

RESULT 2
PIAP_PIG STANDARD: PRT; 358 AA.
AC 062640;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE PUTATIVE INHIBITOR OF APOPTOSIS.
GN PIAP.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxId=9823;
RN [1]
RP SEQUENCE FROM N.A.
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RC TISSUE-Aorta;
RX MEDLINE=98162622; Pubmed=9501011;
RA Steinhil C., de Martin R., Binder B.R., Lipp J.;
RT "Cytokine induced expression of porcine inhibitor of apoptosis
RT protein (Iap) family member is regulated by NF-kappa B.";
RL Biochem. Biophys. Res. Commun. 243:827-832(1998).
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC
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CC -----
CC
CC EMBL: U79142; AAC39171.1; -.
CC DR InterPro: IPR001370; BIR.
CC DR InterPro: IPR001315; CARD.
CC DR InterPro: IPR001841; Znf_Fing.
CC DR Pfam: PF00653; BIR; 2.
CC DR Pfam: PF00619; CARD; 1.
CC DR Pfam: PF00097; zf-C3HC4; 1.
CC DR SMART: SM00238; BIR; 2.
CC DR SMART: SM00114; CARD; 1.
CC DR SMART: SM00184; RING; 1.
CC DR PROSITE: PS01282; BIR_REPEAT_1; 2.
CC DR PROSITE: PS50143; BIR_REPEAT_2; 2.
CC DR PROSITE: PS50209; CARD; 1.
CC KW Apoptosis; zinc-finger; Repeat.
CC FT REPEAT 4 70 BIR 1.
CC FT REPEAT 90 157 BIR 2.
CC FT ZN_FING 311 345 RING-TYPE.
CC SQ SEQUENCE 358 AA; 40977 MW; EB226BFA9A6190A4 CRC64;

Query Match 96.3%; Score 283; DB 1; Length 358;
Best Local Similarity 93.8%; Pred. No. 2.5e-27;
Matches 45; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

OY 1 PEOULASAGFYVYVNSDDVKCFCCDGLRCWESGDDPVMVQHAHAKWPRCE 48
DB 108 PEOULASAGFYVYVNSDDVKCFCCDGLRCWESGDDPVMVQHAHAKWPRCE 155

RESULT 3
BIR3_HUMAN STANDARD: PRT; 618 AA.
AC Q13490; Q16516;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 3 (INHIBITOR OF APOPTOSIS
DE PROTEIN 2) (HIAP2) (HIAP-2) (C-IAP1) (TNFR2-TRAF SIGNALING COMPLEX
DE PROTEIN 2) (IAP HOMOLOG B).
GN BIRC3 OR API2 OR IAP2 OR MIH3.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
OX NCBI_TaxId=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=96128127; Pubmed=8548810; Ayres T.M., Goeddel D.V.;
RX Rothe M., Pan M.-G., Henzel W.J.;
RT "The TNFR2-TRAF signaling complex contains two novel proteins related
RT to baculoviral inhibitor of apoptosis proteins.";
RL Cell 83:1243-1252(1995).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
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RA MEDLINE=96149249; PubMed=8552191.  
RA Liston P., Roy N., Tamai K., Lefebvre C., Baird S., Chertton-Horvat G.,  
RA Farahani R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;  
RT "Suppression of apoptosis in mammalian cells by NAIP and a related  
RT family of IAP genes.";  
RL Nature 379:349-353(1996).  
RN [3]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Fetal liver.  
RX MEDLINE=96209843; PubMed=8643514;  
RX Uren A.G., Pakusch M., Hawkins C.J., Puls K.L., Vaux D.L.;  
RT "Cloning and expression of apoptosis inhibitory protein homologs that  
RT function to inhibit apoptosis and/or bind tumor necrosis factor  
RT receptor-associated factors.";  
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).  
RN [4]  
RP STRUCTURE BY NMR OF 266-363.  
RX MEDLINE=99332054; PubMed=10404221;  
RX Hinds M.G., Norton R.S., Vaux D.L., Day C.L.;  
RT "Solution structure of a baculoviral inhibitor of apoptosis (IAP)  
RT repeat.";  
RL Nat. Struct. Biol. 6:648-651(1999).  
CC -I- FUNCTION: APOPTOTIC SUPPRESSOR. THE BIR MOTIFS REGION INTERACTS  
CC WITH TNF RECEPTOR ASSOCIATED FACTORS 1 AND 2 (TRAF1 AND TRAF2) TO  
CC FORM AN HETEROMERIC COMPLEX, WHICH IS THEN RECRUITED TO THE TUMOR  
CC NECROSIS FACTOR RECEPTOR 2 (TNFR2).  
CC -I- SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).  
CC -I- TISSUE SPECIFICITY: PRESENT IN MANY FETAL AND ADULT TISSUES.  
CC MAINLY EXPRESSED IN ADULT SKELETAL MUSCLE, THYMUS, TESTIS, OVARY,  
CC AND PANCREAS. LOW OR ABSENT IN BRAIN AND PERIPHERAL BLOOD  
CC LEUKOCYTES.  
CC -I- SIMILARITY: BELONGS TO THE IAP FAMILY.  
CC -I- SIMILARITY: CONTAINS 3 BIR REPEATS.  
CC -I- SIMILARITY: CONTAINS 1 CARD DOMAIN.  
CC -I- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.  
CC -----  
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CC -----  
DR EMBL: L49431; AAC1942.1; -;  
DR EMBL: U45879; AAC50372.1; -;  
DR EMBL: U37547; AAC50508.1; -;  
DR PDB: 1QBH; 20-OCT-99.  
DR MIM: 601721; -;  
DR InterPro: IPR001370; BIR.  
DR InterPro: IPR001315; CARD.  
DR InterPro: IPR001841; ZnF\_ring.  
DR Pfam: PF00653; BIR; 3.  
DR Pfam: PF00619; CARD; 1.  
DR Pfam: PF00097; zf-C3HC4; 1.  
DR SMART: SM00238; BIR; 3.  
DR SMART: SM00114; CARD; 1.  
DR SMART: SM00184; RING; 1.  
DR PROSITE: PS01282; BIR\_REPEAT\_1; 3.  
DR PROSITE: PS50143; BIR\_REPEAT\_2; 3.  
DR PROSITE: PS50209; CARD; 1.  
KW Apoptosis; Zinc-finger; Repeat; 3D-structure.  
FT REPEAT 46 113 BIR 1.  
FT REPEAT 184 250 BIR 2.  
FT REPEAT 259 336 BIR 3.  
FT DOMAIN 453 539 CARD.  
FT ZN\_FING 571 605 RING-TYPE.  
FT CONFLICT 157 157 S -> P (IN REF. 2).  
FT CONFLICT 308 308 C -> G (IN REF. 2).  
FT CONFLICT 414 414 O -> L (IN REF. 2).  
FT CONFLICT 514 514 L -> M (IN REF. 2).  
SQ SEQUENCE 618 AA; 69899 MW; C1778D328063586D CRC64;

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Query Match          95.9% ; Score 282; DB 1; Length 618;
Best Local Similarity 93.8%; Pred. No. 5.5e-27;
Matches   45; Conservative    2; Mismatches     1; Indels      0; Gaps       0;

Oy              1 PEOLASAGFYVYGNSDVKFCFCDGGLRCWESGDPPMVAHKWPCE 48
                ||||| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db             287 PEOLASAGFYVGRNDVKCFCCDDGCLRCWESGGDPPMVEAHKWFPRCE 334

RESULT         4
BIR_CHICK      STANDARD;           PRG;        611 AA.
AC Q09660;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE INHIBITOR OF APOPTOSIS PROTEIN (IAP) (INHIBITOR OF T CELL APOPTOSIS
CN IYA).
OS Gallus gallus (Chicken);
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OX Gallus.
NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Spleen;
RX MEDLINE=97101112; PubMed=8945639;
RA Diddy M.R., Kimpson W.G., York J.J., Connick T.E., Lowenthal J.W.;
RT "IRA, a vertebrate homologue of IAP that is expressed in T
RL lymphocytes."
RNA Cell Biol. 15:981-988(1996).
CC - FUNCTION: APOPTOTIC SUPPRESSOR (BY SIMILARITY).
CC - SUBCELLULAR LOCATION: PREDOMINANTLY NUCLEAR.
CC - TISSUE SPECIFICITY: CELLS OF THE T LYMPHOCTE LINEAGE. FOUND IN
CC BOTH CORTICAL AND MEDULLARY CELLS OF THE THYMUS.
CC - DEVELOPMENTAL STAGE: HIGH LEVELS ARE INDUCED WITHIN 4-8 HOURS OF
CC T-CELL ACTIVATION IN SPLEEN AND THYMUS.
CC - SIMILARITY: BELONGS TO THE IAP FAMILY.
CC - SIMILARITY: CONTAINS 3 BIR REPEATS.
CC - SIMILARITY: CONTAINS 1 CARD DOMAIN.
CC - SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
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DR EMBL; U27466; AAB48118.1; -.
DR InterPro; IPRO01370; BIR.
DR InterPro; IPRO01315; CARD.
DR InterPro; IPRO01841; znf_ring.
DR Pfam; PF00653; BIR_3.
DR Pfam; PF00619; CARD_1.
DR Pfam; PF00097; zt-C3HC4; 1.
DR SMART; SMOU0238; BIR; 3.
DR SMART; SMOU0114; CARD; 1.
DR SMART; SMOU0184; RING; 1.
DR PROSITE; PS01282; BIR_REPEAT_1; 3.
DR PROSITE; PS50143; BIR_REPEAT_2; 3.
DR PROSITE; PS50209; CARD; 1.
KW Apoptosis; Zinc-finger; Repeat; Nuclear protein.
FT REPEAT            30               97       BIR 1.
FT REPEAT            176            242       BIR 2.
FT REPEAT            262            329       BIR 3.
FT ZN_FING           564            598       RING-TYPE.
SQ SEQUENCE          611 AA;   69009 MW;   53FC9136F34EBDDD CRC64;
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FT REPEAT 46 113 BIR 1.
FT REPEAT 177 243 BIR 2.
FT REPEAT 262 329 BIR 3.
FT DOMAIN 447 533 CARD.
FT ZN_FING 565 599 RING-TYPE.
FT CONFLICT 380 380 E -> K (IN REF. 2).
SQ SEQUENCE 612 AA: 69676 MW: E08969D93C6C610D CAC64;

Query Match 91.5%; Score 269; DB 1; Length 612;
Best Local Similarity 87.5%; Pred. No. 2.1e-25;
Matches 42; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 PEOLASAGFYVGNSDYKCFCCDGGLECWESGDDPMYQHAKEPFRCE 48
Db 280 PEOLASAGFYVGNRDYKCFCCDGGLECWESGDDPMYHAKEPFRCE 327
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|||||

RESULT 7
IAP3_NPVOP STANDARD; PRT; 268 AA.
AC PA437;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE APOPTOSIS INHIBITOR 3 (IAP-3).
GN IAP3 OR IAP.
OS Orygia pseudotsugata multicapsid polyhedrosis virus (OPMPV).
OC Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
OC Nucleopolydovirus.
OX NCBI_TaxID=164623;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=94187094; PubMed=8139034;
RA Birnbaum M.J., Clem R.J., Miller L.K.;
RT "An apoptosis-inhibiting gene from a nuclear polyhedrosis virus
RL encoding a polypeptide with Cys/His sequence motifs."
RL J. Virol. 68:2521-2528(1994).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=97271300; PubMed=9126251;
RA Ahrens C.H., Russell R.R., Funk C.J., Evans J., Harwood S.,
RA Rohmann G.F.;
RT "The sequence of the Orygia pseudotsugata multinucleocapsid nuclear
RL polyhedrosis virus genome."
RL Virology 229:381-399(1997).
CC -1- FUNCTION: ACTS BY BLOCKING CELLULAR APOPTOSIS RATHER THAN BY
CC PREVENTING VIRAL STIMULATION OF APOPTOSIS.
CC -1- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
CC -----
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CC -----
CC EMBL: L22564; AAB02610.1; -
CC EMBL: U75930; AAC59034.1; -
CC DR InterPro: IPR001370; BIR.
CC DR InterPro: IPR001841; Znf_ring.
CC DR Pfam: PF00653; BIR. 2.
CC DR Pfam: PF00097; zf-C3HC4. 1.
CC DR SMART: SM00238; BIR. 2.
CC DR SMART: SM00184; RING. 1.
CC DR PROSITE: PS01282; BIR_REPEAT_1; 2.
CC DR PROSITE: PS0143; BIR_REPEAT_2; 2.
CC KW Apoptosis; zinc-finger; Repeat.
FT REPEAT 18 84 BIR 1.
FT REPEAT 111 178 BIR 2.
FT ZN_FING 221 255 RING-TYPE.

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```

SQ SEQUENCE      268 AA; 30076 MW; DF89175FDEB5A708 CRC64;

Query Match
Best Local Similarity 68.0%; Score 200; DB 1; Length 268;
Matches 30; Conservative 6; Mismatches 12; Indels 0; Gaps 0;

QY      1 PEOLASGFYYVGNSSDDVKCFCCDGGKLCRCWESGDDPWVOHAKMPPRCE 48
       11 : 11 111 : 1 1 : 11111111 : 11 11 111 : 111
Db      129 PEELEAGFFYTGGDGDKTRCFCDCDGLKDWMEPPDAPMOOHARWVDRC 176

RESULT#   8
IAP_GVCP ID IAP_GVCP STANDARD; PRG; 275 AA.

AC PA1436;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE APOPTOSIS INHIBITOR IAP.
GN IAP.
OS Cydia pomonella granulosis virus (CpGV) (Cydia pomonella
OC Granulovirus).
OX Viruses; dsRNA viruses, no RNA stage; Baculoviridae; Granulovirus.
ON NCB1;taxid=28289;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-M1;
RA MEDLINE-93188168; PubMed=8445726;
RA Crook N.E., Clem R.J., Miller L.K.;
RT "An apoptosis-inhibiting baculovirus gene with a zinc finger-like
RT motif."
RT J. Virol. 67:2168-2174(1993).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-MEXICAN;
RA Kang W.K., Crook N.E., Winstanley D., O'Reilly D.R.;
RL Submitted (DEC-1996) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: ACTS BY BLOCKING CELLULAR APOPTOSIS RATHER THAN BY
CC PREVENTING VIRAL STIMULATION OF APOPTOSIS.
CC CC -!- SIMILARITY: CONTAINS 2 BIR REPEATS.
CC -!- SIMILARITY: CONTAINS 1 ZINC-FINGER TYPE ZINC FINGER.
-----
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CC or send an email to license@isb-sib.ch).
-----
DR EMBL; L05494; AAA43835.1; -
DR EMBL; U53466; AAB3098.1; -
DR InterPro; IPR001370; BIR.
DR InterPro; IPR001841; ZnF_fing.
DR Pfam; PF00653; BIR. 2.
DR SMART; SM00238; BIR. 2.
DR SMART; SM00184; RING. 1.
DR PROSITE; PS01282; BIR_REPEAT_1; 2.
DR PROSITE; PS0143; BIR_REPEAT_2; 2.
KW Apoptosis; Zinc-finger; Repeat.
FT REPEAT 7 73 BIR 1.
FT REPEAT 108 175 BIR 2.
FT ZN_FING 228 262 RING-TYPE.
SO SEQUENCE 275 AA; 31290 MW; 84605448869CAD60 CRC64;

Query Match
Best Local Similarity 62.5%; Pred. No. 2,3e-17;
Matches 29; Conservative 5; Mismatches 13; Indels 0; Gaps 0;

QY      1 PEOLASGFYYVGNSSDDVKCFCCDGGKLRCSWGSDDPWVOHAKMPPRC 47
       111 : 11111111 : 11 11111111 : 11 11 111 : 111

```

DB 126 PEOMADAGFYTYGDMTKCFYCDGLKDWPEDEVPMEOHVMFDRDC 172

RESULT 9

BIRF\_MOUSE STANDARD: PRT: 1403 AA.

ID BIRF\_MOUSE 09JIB6; P81704; 009122; 009121;

AC 20-AUG-2001 (Rel. 40, Created)

DT 20-AUG-2001 (Rel. 40, Last sequence update)

DT 20-AUG-2001 (Rel. 40, Last annotation update)

DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1F (NEURONAL APOPTOSIS

DE INHIBITORY PROTEIN 6).

GN BIRCLF OR NAIP6 OR NAIP-RS4.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI\_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RX MEDLINE=20414747; PubMed=10958627;

RA Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;

RT "Genomic sequence analysis of the mouse Naip gene array.";

RL Genome Res. 10:1095-1102(2000).

RN [2]

RP SEQUENCE OF 82-168 FROM N.A.

RX STRAIN=129/SVJ;

RX MEDLINE=97131520; PubMed=8975718;

RA Scharf J.M., Damron D., Fritsella A., Bruno S., Beggs A.H.,

RA Kunkel L.M., Dietrich W.F.;

RT "The mouse region syntenic for human spinal muscular atrophy lies

RT within the Lcn1 critical interval and contains multiple copies of Naip

RT exon 5.";

RL Genomics 38:405-417(1996).

CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF

CC SIGNALS.

CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.

CC -----

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CC -----

CC EMBL: AF242431; AAF82751.1; -

DR EMBL: U66327; AAC52975.1; -

DR MGD: MGI:1298222; Birc1f.

DR InterPro: IPR001370; BIR.

DR Pfam: PF00653; BIR; 3.

DR SMART: SMO0238; BIR; 3.

DR PROSITE: PS01282; BIR\_REPEAT\_1; 2.

DR PROSITE: PS0143; BIR\_REPEAT\_2; 3.

KW Apoptosis; Repeat; Multigene family.

FT REPEAT 60 127 BIR 1.

FT REPEAT 159 227 BIR 2.

FT REPEAT 278 345 BIR 3.

SQ SEQUENCE 1403 AA; 159823 MW; 9DA912503358C4E9 CRC64;

Query Match 61.6%; Score 181; DB 1; Length 1403;

Best Local Similarity 58.3%; Pred. No. 2.2e-14;

Matches 28; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

OY 1 PEOLASAGFYVGNDDVKRCDCDGLRCWESGDDPMVQHAHAKWPPRCE 48

DB 178 PRVLSAGFVETGKRDTVQCFSCGSLGNMBEGDDPMKEHAKWPPKCE 225

RESULT 10

BIRF\_MOUSE STANDARD: PRT: 1402 AA.

ID BIRF\_MOUSE 09JIB3;

AC 09JIB3;

DT 20-AUG-2001 (Rel. 40, Created)

DT 20-AUG-2001 (Rel. 40, Last sequence update)

DT 20-AUG-2001 (Rel. 40, Last annotation update)

DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1G (NEURONAL APOPTOSIS

DE INHIBITORY PROTEIN 7).

GN BIRCLG OR NAIP7.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI\_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RX MEDLINE=20414747; PubMed=10958627;

RA Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;

RT "Genomic sequence analysis of the mouse Naip gene array.";

RL Genome Res. 10:1095-1102(2000).

CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF

CC SIGNALS.

CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.

CC -----

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CC -----

CC EMBL: AF242433; AAF82749.1; -

DR MGD: MGI:1858256; Birc1g.

DR InterPro: IPR001370; BIR.

DR Pfam: PF00653; BIR; 3.

DR SMART: SMO0238; BIR; 3.

DR PROSITE: PS01282; BIR\_REPEAT\_1; 2.

DR PROSITE: PS0143; BIR\_REPEAT\_2; 3.

KW Apoptosis; Repeat; Multigene family.

FT REPEAT 60 127 BIR 1.

FT REPEAT 159 227 BIR 2.

FT REPEAT 278 345 BIR 3.

SQ SEQUENCE 1402 AA; 159662 MW; C1DFEFA359893E0D CRC64;

Query Match 61.2%; Score 180; DB 1; Length 1402;

Best Local Similarity 58.3%; Pred. No. 2.9e-14;

Matches 28; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

OY 1 PEOLASAGFYVGNDDVKRCDCDGLRCWESGDDPMVQHAHAKWPPRCE 48

DB 178 PRVLSAGFVETGKRDTVQCFSCGSLGNMBEGDDPMKEHAKWPPKCE 225

RESULT 11

BIRF\_MOUSE STANDARD: PRT: 1403 AA.

ID BIRF\_MOUSE 09QWK5; 09R017; 09JIB5;

AC 09QWK5; 09R017; 09JIB5;

DT 20-AUG-2001 (Rel. 40, Created)

DT 20-AUG-2001 (Rel. 40, Last sequence update)

DT 20-AUG-2001 (Rel. 40, Last annotation update)

DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1A (NEURONAL APOPTOSIS

DE INHIBITORY PROTEIN 1).

GN BIRCLF OR NAIP1 OR NAIP.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI\_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RX Varaghi Z., Korneluk R.G., Mackenzie A.E.;

RT "Cloning and characterization of the multiple copies of the murine

RT homologue of Naip (neuronal apoptosis inhibitory protein).";

RL Submitted (JUN-1997) to the EMBL/Genbank/DBJ databases.

RN [2]

RP SEQUENCE FROM N.A.

```

RX MEDLINE-99431676; PubMed-10501978;
RA Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
functional transcripts."
RL Mamm. Genome 10:1032-1035(1999).
RN [3]
RP SEQUENCE FROM N.A.
RC MEDLINE-20414747; PubMed-10958627;
RA Endrizzi M.G., Hadinoto V., Growney J.D., Miller W., Dietrich W.F.;
RT "Genomic sequence analysis of the mouse Naip gene array."
RL Genome Res. 10:1095-1102(2000).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: AF007769; AAB69223.1; -
DR EMBL: AF135491; AAD56763.1; -
DR EMBL: AF242432; AAF82752.1; -
DR MGD: MGI:1298223; Birc1a.
DR InterPro: IPR001370; BIR.
DR Pfam: PF00653; BIR; 3.
DR SMART: SM00238; BIR; 3.
DR PROSITE: PS01282; BIR_REPEAT_1; 1.
DR PROSITE: PS0143; BIR_REPEAT_2; 3.
KW Apoptosis; Repeat; Multigene family.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 2.
FT REPEAT 278 345 BIR 3.
FT REPEAT 343 343 I -> V (IN REF. 2).
FT CONFLICT 359 359 L -> Q (IN REF. 2).
FT CONFLICT 624 624 E -> K (IN REF. 2).
FT CONFLICT 1092 1092 D -> E (IN REF. 3).
FT CONFLICT 1116 1116 D -> N (IN REF. 3).
FT CONFLICT 1123 1123 G -> R (IN REF. 3).
FT CONFLICT 1129 1129 L -> H (IN REF. 1).
FT CONFLICT 1140 1140 T -> M (IN REF. 2).
FT CONFLICT 1269 1269 A -> V (IN REF. 3).
SQ SEQUENCE 1403 AA; 158692 MW; B3163025955EE67 CRC64;

Query Match 61.2%; Score 180; DB 1; Length 1403;
Best local similarity 58.3%; Pred. No. 2,9e-14;
Matches 28; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Oy 1 PEOLASAGFYVNSDDVKFCDCGRLCWESGDDPWVQHAKEPKE 48
Db 178 PVLISAGFVFTGKRDTVOCFSGSLGNWEGDDPWVQHAKEPKE 225

RESULT 12
ID BIR_MOUSE STANDARD: PRT: 1403 AA.
AC O9R016: O9R029; P81703; 009122; 009121;
DT 20-AUG-2001 (Rel. 40, Created)
DT 20-AUG-2001 (Rel. 40, Last sequence update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 1E (NEURONAL APOPTOSIS
DE INHIBITORY PROTEIN 5).
GN BIRCE OR NAIP5 OR NAIP-RS3.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.

```

```

RX MEDLINE-99431676; PubMed-10501978;
RA Huang S., Scharf J.M., Growney J.D., Endrizzi M.G., Dietrich W.F.;
RT "The mouse Naip gene cluster on Chromosome 13 encodes several distinct
functional transcripts."
RL Mamm. Genome 10:1032-1035(1999).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-129/SV;
RX MEDLINE-99417674; PubMed-10486205;
RA Endrizzi M., Huang S., Scharf J.M., Kelter A.R., Wirth B.,
RA Kunzel L.M., Miller W., Dietrich W.F.;
RT "Comparative sequence analysis of the mouse and human Lgn1/SMA
RT interval."
RL Genomics 60:137-151(1999).
RL [3]
RP SEQUENCE OF 82-168 FROM N.A.
RC STRAIN-129/SVJ;
RX MEDLINE-97131520; PubMed-8975718;
RA Scharf J.M., Danton D., Fritsella A., Bruno S., Beggs A.H.,
RA Kunzel L.M., Dietrich W.F.;
RT "The mouse region syntenic for human spinal muscular atrophy lies
RT within the Lgn1 critical interval and contains multiple copies of Naip
RT exon 5."
RL Genomics 38:405-417(1996).
CC -1- FUNCTION: PREVENTS MOTOR-NEURON APOPTOSIS INDUCED BY A VARIETY OF
CC SIGNALS.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -----
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CC -----
DR EMBL: AF135492; AAD56764.1; -
DR EMBL: AF131205; AAD56760.1; -
DR EMBL: AF63326; AAC52974.1; -
DR MGD: MGI:1298220; Birc1e.
DR InterPro: IPR001370; BIR.
DR Pfam: PF00653; BIR; 3.
DR SMART: SM00238; BIR; 3.
DR PROSITE: PS01282; BIR_REPEAT_1; 2.
DR PROSITE: PS0143; BIR_REPEAT_2; 3.
KW Apoptosis; Repeat; Multigene family.
FT REPEAT 60 127 BIR 1.
FT REPEAT 159 227 BIR 2.
FT REPEAT 278 345 BIR 3.
FT CONFLICT 92 92 K -> R (IN REF. 1).
FT CONFLICT 144 144 S -> R (IN REF. 1).
FT CONFLICT 242 242 S -> G (IN REF. 2).
FT CONFLICT 472 472 T -> A (IN REF. 2).
FT CONFLICT 516 516 A -> D (IN REF. 2).
FT CONFLICT 521 521 A -> T (IN REF. 2).
FT CONFLICT 533 533 V -> A (IN REF. 2).
FT CONFLICT 538 538 S -> I (IN REF. 2).
FT CONFLICT 1092 1092 E -> D (IN REF. 2).
FT CONFLICT 1129 1129 H -> L (IN REF. 2).
FT CONFLICT 1137 1137 R -> O (IN REF. 2).
FT CONFLICT 1242 1242 V -> I (IN REF. 2).
FT CONFLICT 1276 1276 D -> N (IN REF. 2).
SQ SEQUENCE 1403 AA; 159695 MW; B27E645043BC642 CRC64;

Query Match 61.2%; Score 180; DB 1; Length 1403;
Best local similarity 58.3%; Pred. No. 2,9e-14;
Matches 28; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Oy 1 PEOLASAGFYVNSDDVKFCDCGRLCWESGDDPWVQHAKEPKE 48
Db 178 PVLISAGFVFTGKRDTVOCFSGSLGNWEGDDPWVQHAKEPKE 225

```

```

RESULT 13
BIR4_MOUSE STANDARD: PRT: 496 AA.
AC 060989; 008665;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE (IAP HOMOLOG A) (MIAP3) (MIAP-3).
GN BIRC4 OR API3 OR XIAP OR AIP4 OR AIP4 OR AIP4.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6 X CBA; TISSUE=Liver;
RC MEDLINE=96209843; PubMed=8643514;
RA Uren A.G., Pakusch M., Hawkins C.J., Puls R.L., Vaux D.L.;
RT "Cloning and expression of apoptosis inhibitory protein homologs that
RT function to inhibit apoptosis and/or bind tumor necrosis factor
RT receptor-associated factors."
RL Proc. Natl. Acad. Sci. U.S.A. 93:4974-4978(1996).
RN [2]
RP SEQUENCE FROM N.A.
RA Paranal R., Lefebvre C., Korneluk R.G., Mackenzie A.E.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
CC CASPASE-7 (BY SIMILARITY).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
-----
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-----
CC
CC EMBL: U08890; AAC52594.1; -.
CC MGD: MGI:107572; Birc4.
DR InterPro: IPR001370; BIR.
DR InterPro: IPR001841; Znf_ring.
DR Pfam: PF00653; BIR_3.
DR SMART: SM00238; zf-C3HC4; 1.
DR SMART: SM00184; RING; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS0143; BIR_REPEAT_2; 3.
KW Apoptosis; Zinc-finger; Repeat.
FT REPEAT 26 93 BIR 1.
FT REPEAT 163 230 BIR 2.
FT REPEAT 264 329 BIR 3.
FT ZN_FING 449 483 RING-TYPE.
FT 208 208 E -> K (IN REF. 2).
FT 317 317 W -> D (IN REF. 2).
FT 322 322 W -> C (IN REF. 2).
FT 346 346 S -> P (IN REF. 2).
FT 360 360 S -> P (IN REF. 2).
FT 388 388 I -> L (IN REF. 2).
FT 449 449 C -> S (IN REF. 2).
FT 462 462 V -> F (IN REF. 2).
FT 468 468 V -> A (IN REF. 2).
FT 490 490 K -> N (IN REF. 2).
SQ SEQUENCE 496 AA; 56079 MW; EC5FAE0799F2CDD8 CRC64;

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Query Match 60.2%; Score 177; DB 1; Length 496;  
 Best Local Similarity 61.7%; Pred. No. 2,6e-14;  
 Matches 29; Conservative 5; Mismatches 13; Indels 0; Gaps 0;

```

OY 2 EOLASAGFYVNSDDVACFCCDGLRCMESGDDPWVQNAKWPCE 48
    ||||| ||||| : ||||| ||||| : ||||| ||||| : |||||
DB 281 EOLARAGFYALGEGDKVACFHCQGGGLTDMKPSDDPWQNAKWPCE 327

```

## RESULT 14

```

BIR4_RAT STANDARD: PRT: 496 AA.
AC 09R016;
DT 20-AUG-2001 (Rel. 40, Created)
DT 20-AUG-2001 (Rel. 40, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS
DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)
DE (IAP HOMOLOG A) (RIAP3) (RIAP-3).
GN BIRC4 OR API3 OR XIAP.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RA Saito N.;
RT "Rattus norvegicus X-linked inhibitor of apoptosis (riap3) mRNA."
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND
CC CASPASE-7 (BY SIMILARITY).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.
CC -1- SIMILARITY: CONTAINS 3 BIR REPEATS.
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.
-----
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CC or send an email to license@isb-sib.ch).
-----
CC
CC EMBL: AB033366; BAA85304.1; -.
CC InterPro: IPR001370; BIR.
DR InterPro: IPR001841; Znf_ring.
DR Pfam: PF00653; BIR_3.
DR SMART: SM00238; zf-C3HC4; 1.
DR SMART: SM00184; RING; 1.
DR PROSITE: PS01282; BIR_REPEAT_1; 3.
DR PROSITE: PS0143; BIR_REPEAT_2; 3.
KW Apoptosis; Zinc-finger; Repeat.
FT REPEAT 26 93 BIR 1.
FT REPEAT 163 230 BIR 2.
FT REPEAT 264 329 BIR 3.
FT ZN_FING 449 483 RING-TYPE.
SQ SEQUENCE 496 AA; 56072 MW; E250E3C77461A469 CRC64;

```

Query Match 60.2%; Score 177; DB 1; Length 496;  
 Best Local Similarity 61.7%; Pred. No. 2,6e-14;  
 Matches 29; Conservative 5; Mismatches 13; Indels 0; Gaps 0;

```

OY 2 EOLASAGFYVNSDDVACFCCDGLRCMESGDDPWVQNAKWPCE 48
    ||||| ||||| : ||||| ||||| : ||||| ||||| : |||||
DB 281 EOLARAGFYALGEGDKVACFHCQGGGLTDMKPSDDPWQNAKWPCE 327

```

```

RESULT 15
BIR4_HUMAN STANDARD: PRT: 497 AA.

```



AC P88170; [99NO14;  
DT 01-OCT-1996 (rel. 34, Created)  
DT 01-OCT-1996 (rel. 34, Last sequence update)  
DT 20-AUG-2001 (rel. 40, Last annotation update)  
DE BACULOVIRAL IAP REPEAT-CONTAINING PROTEIN 4 (INHIBITOR OF APOPTOSIS  
DE PROTEIN 3) (X-LINKED INHIBITOR OF APOPTOSIS PROTEIN) (X-LINKED IAP)  
DE (IAP-LIKE PROTEIN) (HLP)  
DE BIRC4 OR API3 OR XIAP.  
GN Homo sapiens (Human).  
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.  
OX NCBI\_TaxId=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Fetal brain;  
RX MEDLINE=96149249; PubMed=8552191.  
RA Liston P., Roy N., Tamai K., Leibeuvre C., Baird S., Cherton-Horvat G.,  
RA Farhadi R., McLean M., Ikeda J., Mackenzie A., Korneluk R.G.;  
RT "Suppression of apoptosis in mammalian cells by NAIP and a related  
RT family of IAP genes."  
RL Nature 379:349-353(1996).  
RN [2]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Fetal heart;  
RX MEDLINE=96256286; PubMed=8654366;  
RA Duckett C.S., Nava V.E., Gedrich R.W., Clem R.J., van Dongen J.L.,  
RA Gilliland M.C., Shultz H., Hardwick J.M., Thompson C.B.;  
RT "A conserved family of cellular proteins related to the baculovirus Iap  
RT gene and encoding apoptosis inhibitors."  
RL EMBO J. 15:2685-2694(1996).  
RN [3]  
RP SEQUENCE FROM N.A.  
RA Grafham D.;  
RL Submitted (APR-2000) to the EMBL/GenBank/DBJ databases.  
RN [4]  
RP FUNCTION  
RX MEDLINE=97373959; PubMed=9230442;  
RA Deveraux Q.V., Takahashi R., Salvesen G.S., Reed J.C.;  
RT "X-linked IAP is a direct inhibitor of cell-death proteases."  
RL Nature 388:300-304(1997).  
CC -1- FUNCTION: APOPTOTIC SUPPRESSOR. INHIBITOR OF CASPASE-3 AND  
CC CASPASE-7.  
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.  
CC -1- TISSUE SPECIFICITY: UBIQUITOUS, EXCEPT PERIPHERAL BLOOD  
CC LEUKOCYTES.  
CC -1- SIMILARITY: BELONGS TO THE IAP FAMILY.  
CC -1- SIMILARITY: CONTAINS 3 IAP REPEATS.  
CC -1- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER.  
CC  
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CC or send an email to [license@isb-stb.ch](mailto:license@isb-stb.ch)).  
CC  
DR EMBL: U45880; AAC50373.1; -;  
DR EMBL: U39274; AAC50518.1; -;  
DR EMBL: AL121601; CAB95312.1; -;  
DR MIM: 300079; -;  
DR InterPro: IPR001370; BIR  
DR InterPro: IPR001841; ZnF\_rIng.  
DR Pfam: PF00653; BIR\_3.  
DR Pfam: PF00097; zf-C3HC4\_1.  
DR SMART: SMO0238; BIR\_3.  
DR SMART: SMO0184; RING\_1.  
DR PROSITE: PS01282; BIR\_REPEAT\_1; 3.  
DR PROSITE: PS50143; BIR\_REPEAT\_2; 3.  
KW Apoptosis; Zinc-finger; Repeat; Thiol protease inhibitor.  
FT Repeat 26 93 BIR 1.  
FT Repeat 163 230 BIR 2.  
FT Repeat 265 330 BIR 3.

FT	2N_PING	450		RING-CTE.					
FT	CONFLICT	162	182	S -> C (IN REF. 1).					
FT	CONFLICT	423	423	Q -> P (IN REF. 2).					
50	SEQUENCE	497 AA;	56684 MW;	9D394C16D45EB635	CRC64;				
Query Match									
Best Local Similarity		60.2%;		Score 177;	DB 1;				
Matches 29;		Conservative		Pred. No. 2.6e-14;					
				Mismatches 13;					
				Indels					
Oy	2 EQLASAGFYVNGSDPFCFCCDGLRMCESDIPMYOHAKEPFCPE 48								
	:                   :                   :								
Db	282 EQLARAGFYALGSDKVKCFHCFCGGGLTDMKPSBEDPWEQHAHWYRCK 328								

Search completed: January 7, 2002, 16:05:26  
Job time: 1405 sec

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